

A Computerized Comprehensive Geriatric Assessment Tool

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Background

The elderly represent 13% of the U.S. population yet consume over 40% of health care services. The U.S. population age 60 and above is projected to increase by 70% by 2020. Frail elderly patients have a constellation of problems beyond the traditional disease model. Specialized geriatric teams working with both inpatients and outpatients have evolved around the concept of a comprehensive geriatric assessment to evaluate the patient's health status and formulate a treatment plan. At the Salt Lake City VA Medical Center this is a multidisciplinary team which, in addition to physicians and nurses, includes professionals from disciplines such as social work, pharmacy, nutrition, physical and occupational therapy, and dentistry.

Studies have shown that this multidisciplinary approach can result in improvements in patient's health status as measured by such outcomes as increased new diagnoses, the elimination of unnecessary or harmful drugs, and reduced hospitalizations. This success is dependent upon good communication among team members and a method of synthesizing individual assessments into a coordinated plan. Redundant data acquisition by team members and communication via the paper based record is actually a barrier to this process. Traditional team meetings are a time consuming and inefficient means of comprehensive treatment planning.

Methods

We are developing and testing a computerized comprehensive geriatric assessment tool (CGAT) to facilitate this multidisciplinary approach to geriatric health care. The database program was developed in Access, Microsoft's relational database management system. Data entry and

display screens were designed using Delphi, a Borland product. Each team member has a pen based portable GRiD computer for data entry at the point of patient contact. These client computers are radio linked to a database server controlled by the system manager. The executable program resides on the client computers; multi-user data files reside on the server.

The graphical client program is organized by discipline. Each team member's discipline is identified upon logging in and he enters or edits data within his clinical area. There are no hidden data, so each team member can see each of the other discipline's screens in a read only format. Redundant data (e.g., patient weight, ability to feed self, etc.) were identified and their collection was assigned to the most qualified discipline (in this example, nursing). The client/server structure preserves data integrity and provides concurrent data access. Data validation and error checking are performed on the client computer. Calculations (e.g., estimated creatinine clearance) are automatically performed as all necessary clinical data is available (age, height, weight and serum creatinine). Each discipline creates an assessment and plan based on the patient's findings.

Conclusions

The CGAT forces the use of standardized assessment instruments and facilitates the generation of a comprehensive plan by combining the individual assessments and recommendations. An added research benefit is the compilation of a database of patients who have been evaluated by the geriatric team. Since standardized instruments are used, data among patients and among personnel within disciplines are comparable.